



SPARK GAP

Vol. 36, Issue 12, December 2020 *MARC - Serving Central Indiana Communities for thirty-three years*

On Our M.A.R.C.

On Sunday, 13-December we initiated a weekly Tech Discussion using WebEx virtual meeting software. I would like members to volunteer to lead further tech or round table discussions. Please submit topics of interest by email to President@midstatehams.org and also let me know if you would like to lead a topic and when. I will start putting together a Tech Discussion schedule which will be placed on the club website www.midstatehams.org when we have a few entries. I would be happy to set up the WebEx for you if you volunteer to lead a discussion or presentation. Anything Amateur related is fair game.

Due to the high risk of Covid, for the safety of our members, this month's MARC meeting will be held virtually using WebEx and we will also broadcast the audio on the MARC 2m repeater. Please plan to participate by WebEx and/or by 2m repeater.

Jim Adams, KB9JMU will be giving a presentation about POTA (Parks On The Air) during the December meeting. He will be using WebEx and broadcasting through the 2m repeater from the safety of his home. Thanks Jim.

We will hold testing for the pre-registered people in the garage area of the radio room, 1 Caisson Dr. Franklin. A limited number of VEs that are also Board members will broadcast on 2m and run WebEx from the garage area of the radio room, so we can conduct testing afterward for those who studied and signed up. Attendance in person will be for the scheduled VEs and testers only please.

We will evaluate our meetings and testing month-to-month, but at the moment, plan on the January meeting being virtual via WebEx.

73 de WC9G
Tim Aldridge
President, Mid-State Amateur Radio Club
President@midstatehams.org





December Birthdays:

W9HR - Doug Chapman

KQ9Y - Chris Frederick

AE9H - Phil Melick

From the Treasurer.....Kroger App and Club Dues

I spoke with the Store Manager at Kroger about some issues people are facing with signing up with an organization. He recommended going through the app. He gave me the following directions:

- 1) open the app
- 2) click on the 3 bars at the top right or left
- 3) click on rewards
- 4) click on community rewards
- 5) while in enrollment click on change or select organization
- 6) type mid state in the search organization bar
- 7) scroll down look for our club
- 8) click enroll

This should help get us signed up.

- 1) Pay dues through PayPal. Go to the website for the link.
- 2) Sign up for Amazon Smile . Go to the website for directions. Please pass along to friends and family. Amazon sends us a check.
- 3) Sign up for Kroger. Go to the website for directions. Please pass along to friends and family. Kroger sends us a check.

Chris Mazzarella, KC9VGQ

Baluns: What are they/why are they needed? by Bruce, K9ICP

If you ever had the occasion to review literature about antennas, you likely would have to come across something called a “balun”. Balun is a word constructed from the words “balanced” and “unbalanced”. It identifies any of a series of devices used to couple unbalanced transmission lines to balanced loads. In this article, I am going to provide a basic description of what a balun is and why we need to have one.

You’ve probably heard that a balun is used to feed a balanced antenna. What is a balanced antenna? The determining factor here is how the antenna is fed. Allow me to answer this question by offering an example. A half-wave dipole, current fed across a center insulator, is perhaps the most common example. This antenna is designed to perform best when each side is fed separate currents of equal amplitude and opposite phase (current direction).

In today’s marketplace just about all of the transmitters use the same output circuit which is called a “pi network”. This single ended circuit has become very popular in that it supports using coaxial cable. Coaxial cable is convenient to use, but it is an unbalanced feed line. All the current flows inside the line. The inner conductor and the inside of the shield are the two conductors in this line. Therein lies the problem. Feeding a balanced antenna with an unbalanced feed line may cause currents to flow on the outside of the shield.

Imbalanced current is the cause of a number of undesirable effects:

- Pattern distortion (caused by the feed line radiation adding to the antenna-radiated field, or by unequal currents in the antenna halves)
- TVI (radiation from a feed line coupling into nearby television sets, radios, house wiring, and so on)
- RF in the shack (caused by a “hot” radiator – feed line – residing in the shack)

Typically, a 1:1 balun would be used with a simple dipole. A 4:1 or 9:1 balun might be used for a multi band dipole with a tuner. A 4:1 balun is typically used with twin line cable. Please note that the SWR may not be impacted by non-use of a balun.

A simple balun design is a number of coils of wire (wrapped with several turns) that is positioned in series with the coaxial cable. There are different opinions whether the balun should be placed high near the antenna-coax connection or closer to the radio end of the coaxial cable. The high place seems to make more sense to avoid possible TVI problems.

This is a very simple explanation of baluns and their use. Much greater detail can be found in most antenna booklet or article including the ARRL Antenna Book. Below is a picture of a commercially made balun.



Jack's Ham Shack

After 34 years of operating as an Extra Class ham I finally have organized a comfortable Ham Shack. Fourteen years ago, when we moved into our condo, I left behind a 42-foot tower with three element beams, a multiband inverted-V antenna that stretched 125 feet across the backyard and a couple of VHF and UHF beams for working satellites.



By comparison, I now have an antenna farm in the condo attic. There are three wire antennas stretched horizontally across the wide expanse of the attic above the garage. Two ham stick dipoles complete the HF set up. And, I found room for three dual band antennas for working VHF/UHF. Why three? It helps being able to multi-task during severe weather or other emergencies when needed.

The Ham Shack hardware includes a Yaesu Ft-847 all-mode transceiver. My main HF radio is the Yaesu Ft-991 which gets a workout on digital modes like FT8, FT4, PSK31 and WinLink. I bought it for the multi-band capabilities and for its size and portability during Field Day, the Strawberry Fest and other remote operations like National Parks on the Air. During 2016 I activated five national parks from Indiana to the Florida Everglades. Having a 100-watt HF radio running to a multi-band backpack vertical antenna makes for an excellent portable field station. I use two wheel chair deep cycle batteries to power the radio and laptop computer in the field.

But wait, there's more. A 33-year old Alinco DR-590 mobile is used to run Amateur Radio Newsline and to monitor the National Simplex 146.52 frequency. You never know who might be racing up or down I-65 through Johnson and Marion county. The Yaesu FT-7800 mobile is used for backup and to run an APRS base station. You can now see why I need three dual band antennas in the attic.

Of course, if you run digital modes you need a computer or two. I have three desktop computers plus the laptop if needed. Having several keyboards and mouse units can get confusing. If you are not careful it's possible to accidentally click on the wrong computer and wind up making a FT8 contact in Russia, Africa or even Europe.



Power supplies include an Astron RS-35-amp and a MFJ 20-amp solid state supply. My multi-gang antenna switch makes it possible to route any antenna to the two HF radios. I use an ancient VIZ-Power Line Monitor to watch the AC line. Computers and radios come off an APC surge protector. The Kenwood TS-520 is in the closet in case of an EMP strike.

Living in a condo does require some compromises with antennas and radio output power. That's one of the main reasons I enjoy the digital modes. I can make worldwide contacts using 30 watts without messing up a neighbor's TV.



I might mention that all of my attic antennas are tuned to the low end of each band for digital or CW use. When operating SSB I erect a portable field antenna and place it out in the front yard and hope that none of the 92 neighbors with dogs trip over the guy wires. The last antenna is an 80-meter ham stick dipole on a 15-foot mast in the corner of our little patio. So far, the HOA hasn't sent me a notice.

The last lesson is, don't let size or space keep you off the HF bands. Just string up a piece of wire across your attic or under the house eaves. You can **Tune In the World.**

-Jack W8ISH

**MERRY CHRISTMAS & HAPPY HOLIDAYS
FROM THE
MID-STATE AMATEUR RADIO CLUB**



Winter Field Day – 2021

by Bruce, K9ICP

The 2021 Winter Field Day (WFD) event will be here soon. Last year MARC participated in WFD for the first and did respectably well. For those who may not be familiar with WFD, it is similar to ARRL Field Day except it is held during the winter time. The object of WFD is to prepare and focus for emergency operation under more extreme conditions.

In 2021, WFD will run for 24 hours during the last full weekend in January. This will be from Saturday, January 30 starting at 2:00 pm (EST) through Sunday, January 31 at 2:00 pm (EST). Operation will be on all Amateur bands, HF, VHF, UHF except 12, 17, 30, and 60 meters. Any mode can be used with the required exchange except FT8 and FT4. Categories of operations include indoor, outdoor, and home. Some specific rules apply to logging club participation.

As we begin to plan for MARC participation, we need to determine who is interested in being part of this effort. ***If you are interested or have further questions about WFD please contact Bruce Tisdale (K9ICP) by the of December.*** More general details of this event are published on the WFD website (www.winterfieldday.com). MARC participation information will be forthcoming as we get closer to the event.

Unlicensed people buying HAM radios

Sent to Rick Roderick, K5UR the president of ARRL:

Rick:

Here's a clip from our most recent newsletter here in Columbus, Indiana. The two unlicensed individuals involved assert that they have every right to use our repeaters since they paid for their radios at Walmart. They refuse to cease & desist. This particular problem would be much less likely to exist if Walmart required a current FCC Amateur Radio Service license in order for a customer to purchase these radios. --Noel N9CJT

Here's Rick's response so far:

Noel, they are a problem and FCC is very much aware of it. In situations where they have been used illegally, i.e. recently by a group of hunters, we try to get the FCC involved.

The UV-5R was once illegal under Part 90. Seems I recall they had another unit that was acceptable.

I'll pass this along to our Headquarters personnel. I'm copying our CEO, David Minister, NA2AA, on both of your emails. We can alert our FCC counsel as well. I'm also copying my colleague and your Division Director, Kermit Carlson, W9XA, so he is aware of the situation.

73, Rick - K5UR

This topic was reported recently on ARNewsline:

MARKETER OF MOBILE RADIOS AND HTS CHARGED BY FCC

JIM/ANCHOR: The FCC has cracked down on a California-based company, saying it sold radios capable of transmitting illegally. Jack Parker W8ISH tells us more.

JACK: The U.S. Federal Communications Commission has charged a radio marketer with the sale of six models of mobile and handheld two-way radios that allowed transmission outside authorized frequencies. The November 24th action by the agency's Enforcement Bureau notified Rugged Race Products, also known as Rugged Radios, that the California company must immediately stop selling the radios in the U.S. or face fines. According to the FCC citation, the agency's inquiry of the company's marketing dates back to its initial contact in August of 2018 in response to complaints. The citation says Rugged Radios acknowledged that it marketed each of the six models identified in the letter of inquiry, dating as far back as February 2014.

The citation further says: [quote] "Rugged Radios acknowledged that all six models were 'sold with the capability of being face-programmable to allow a user to enter new operating frequencies' and that the associated manufacturer or supplier delivered the radio to the Company with this capability." [endquote]

The FCC acknowledges, however, that after the first letter of inquiry, Rugged Radios did take steps to comply with agency rules and halted its marketing of four of the six models and later ensured that new models included the appropriate FCC ID and labeling information. The company also made firmware changes that disabled face-programming changes on the two remaining models but ultimately pulled them from the market as well in May of 2020.

The FCC has given the company 30 days to respond to the citation.

For Amateur Radio Newsline I'm Jack Parker W8ISH.

This has been an ongoing problem for sometime and the FCC is taking measures to remedy the situation. We all have to deal with the QRM from someone keying up or purposely interfering with a legitimate operator using a frequency. This at times happens on our own club repeater and it is annoying to say the least especially if there is a Skywarn Net or a club activity going on. Hopefully a solution can be worked out we can all live with.

..... Bob, N9SIU



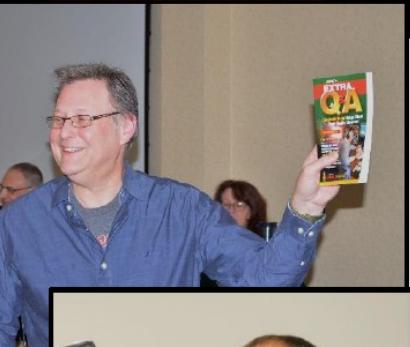
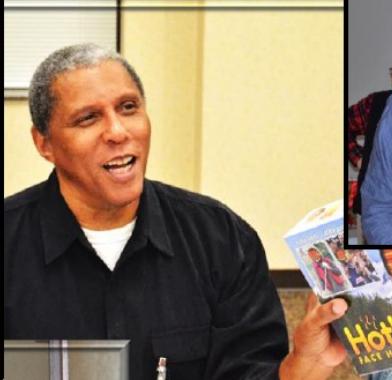
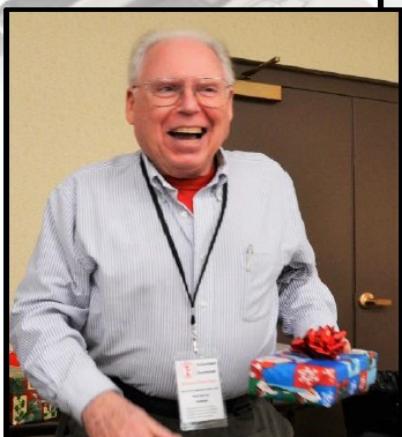
A MARC MERRY CHRISTMAS

"Twas a week before Christmas around Johnson county, good hams were masking up awaiting Santa's bounty."

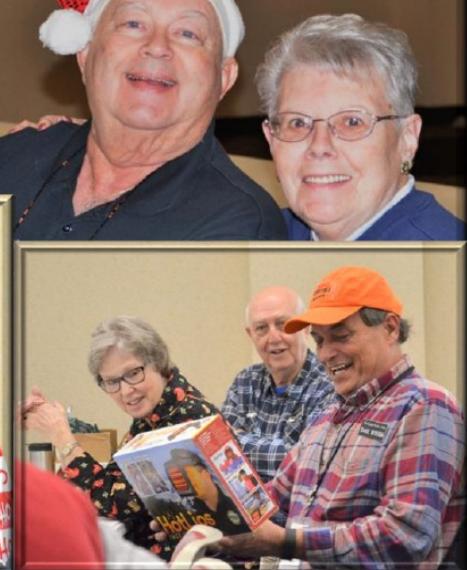
Unfortunately, our annual club Christmas breakfast has been put on hold. Waiting for the Pandemic to pass like a nasty cold. Let's celebrate past gatherings and look to next year when hopefully we will gather and exchange Christmas cheer. Here is

a quick look at our Holiday breakfasts and White Elephant exchanges in the past.





MORE CHRISTMAS CHEER

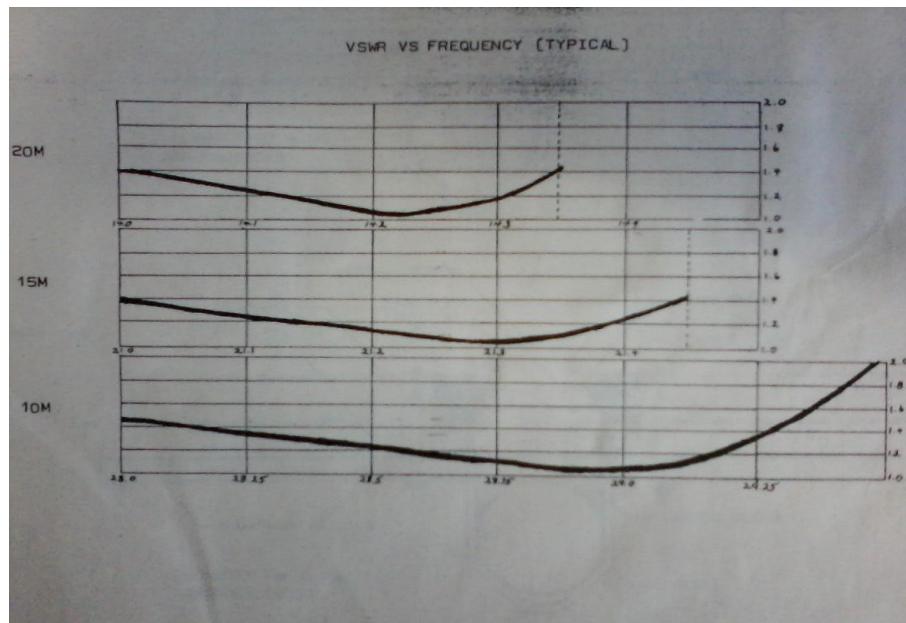


..... *Pics by Jack, W8ISH*

Buy Sell and/or Trade:

Subject:Please share this info with your club members. Antenna for sale. Thanks, Jerry W5KHW

4 Element-3 Band (20,15,10) Amateur Radio Beam Antenna. Made by TET, Australia. Purchased from Ham radio TET dealer in California. Low SWR across full bandwidth on all bands without tuner. Can use on 17 and 12 meter bands with tuner. 19' boom (see picture). Comes apart in 3 major sections. Can take apart every element if prefer. Have complete manual with full assembly instructions. \$200.00 firm. Local pickup only. Jeffersonville, Indiana. Respond by e-mail.



email: keepingbees@juno.com



MID-STATE AMATEUR RADIO CLUB

The Mid-State Amateur Radio Club meets the THIRD SATURDAY of each month at the Johnson County REMC 750 International Drive Franklin, IN 46131.

See our website, www.midstatehams.org, for maps on how to get to our meeting.

Everyone is welcome; you do not have to be a *HAM* to attend our meetings or a member of the club.

W9MID Repeater:

146.835/
146.235 MHz
(151.4 Hz PL Tone)

Club Officers:

President: Tim Aldridge - WC9G
Vice President: Jacki Frederick – KI6QOG
Secretary: Chris Read – W9OQ
Treasurer: Chris Mazzarella – KC9VGQ
Repeater Trustee - Chris Frederick – KQ9Y

W9MID Repeater:

443.525/
448.525 MHz
(151.4 Hz PL Tone)

Weekly Net: Sunday evening 7:00 PM ARES/RACES members and ALL RADIO AMATEURS
146.835/146.235 MHz (151.4 Hz PL Tone)

The Official Newsletter of the Mid-State Amateur Radio Club

P.O. Box 836
Franklin, Indiana
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Spark Gap Editor: Robert LaGrange N9SIU

Please send your articles to my email: n9siu@yahoo.com no later than the 2nd week of the month.



Special thanks to Johnson County REMC for the use of their community room for meetings and testing.